4116-T61 Multi-Band, Block Translator, Weather Resistant*

The 4116-T61 Translator converts one of three input RF bands to one of three output RF bands. Front panel LEDs provide indication of DC Power, and PLL Alarm. The RF to RF gain is +20 dB, maximum. Connectors are Type N female for the RF out, RF in and RF in Monitor and SMA female for the external reference input and reference output. Gain, band select, and internal 10 MHz frequency are controlled by the Ethernet M&C or via the Status/Control connector. The 10 MHz reference switches to internal when the external falls below +1 dBm.

**Input Characteristics**
- Impedance/Return Loss: 50Ω +0 to 60°
- Frequency (GHz): SEE BAND CHART
- Noise Figure, Max.: 20 dB at max gain
- Input Level range: -30 to -10 dBm

**Output Characteristics**
- Impedance/Return Loss: 50Ω +0 to 60°
- Frequency (GHz): SEE BAND CHART
- Output Level Range: -60 to 0 dBm
- Output 1 dB comp., max. gain: +8 dBm, +10 typ.

**Channel Characteristics**
- Gain: +20 ±3 dB max., (+20 to -40 dB variable in 1 dB steps)
- Input to Output Isolation: > 60 dB typ.
- Spurious, Inband: > 50 dBC min.
- Spurious, Sig. Rel., Band 1: > 20 dBc
- Spurious, Sig. Rel., Band 2: > 45 dBc
- Spurious, Sig. Rel., Band 3: > 45 dBc
- Frequency Response: ±2 dB, over RF band; ±0.5 dB, 40 MHz BW
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency Band Specific: ±0.05 ppm max over temp internal reference; ext. ref. input
- LO Frequency Accuracy: 10 MHz level

**Controls, Indicators**
- Gain, Band, 10 MHz Freq.: Gain, band select, and internal 10 MHz frequency via Ethernet M&C or Status/Control connector.
- PLL Alarm: Red LED, External contact closure
- Power: Green LED

**Other**
- RF In, Mon., Out Connector: Type N (female), 50Ω
- 10 MHz Connectors: SMA (female), 50Ω
- Status/Control Connector: MS3116F14-18P; RJ45 Weather Resistant* Ethernet Connector
- Power: 10-240 ±10% VAC, 47-63 Hz, 25 watts max./ FCI Clipper Series CL1M1012 connector

*Weather Resistant enclosures are designed to be water resistant for installation in an outdoor enclosure. 

If an extended temperature range is required, there is an Extended Temperature option (Option W21; -30 to +60°C) available at an additional cost. Contact Cross for quote.

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**EQUIPMENT SPECIFICATIONS**

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  - Impedance/Return Loss: 50Ω +0 to 60°
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**Band Chart - Frequencies, Translations, 10kHz Phase Noise**

<table>
<thead>
<tr>
<th>BAND</th>
<th>IN RANGE</th>
<th>OUT RANGE</th>
<th>TRANSLATE</th>
<th>PH NOISE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO.</td>
<td>(GHz)</td>
<td>(GHz)</td>
<td>DEFAULT (GHz)</td>
<td>RANGE (GHz)</td>
</tr>
<tr>
<td>1</td>
<td>6.55-7.6</td>
<td>3.4-4.5</td>
<td>2.45</td>
<td>2.05-3.05</td>
</tr>
<tr>
<td>2</td>
<td>13.75-14.85</td>
<td>11.7-12.8</td>
<td>3.05</td>
<td>2.05-3.05</td>
</tr>
<tr>
<td>3</td>
<td>13.75-14.85</td>
<td>11.7-12.8</td>
<td>2.05</td>
<td>2.05-3.05</td>
</tr>
<tr>
<td>4</td>
<td>13.75-14.85</td>
<td>11.7-12.8</td>
<td>1.5</td>
<td>1.24-1.80</td>
</tr>
<tr>
<td>5</td>
<td>17.3-18.4</td>
<td>10.7-11.8</td>
<td>6.6</td>
<td>6.6</td>
</tr>
<tr>
<td>6</td>
<td>17.3-18.4</td>
<td>11.7-12.8</td>
<td>5.6</td>
<td>5.1-5.6</td>
</tr>
</tbody>
</table>

* 5 MHz steps; >75 dBC for 1 MHz steps

**Gain Specifications subject to change without notice**